

REMARKS/ARGUMENTS

I. Introduction

Claims 60-62 are amended, and claims 73-78 are new. Claims 47-49, 53-55, 60-63, 67, and 70-78 are now pending in the application. (Claims 1-46, 50-52, 56-59, 64-66, 68, and 69 were previously canceled.) Applicants respectfully request reconsideration of the application.

II. Rejection Under 35 USC § 112, Second Paragraph

Claims 47-49, 53-55, 60-63, 67, and 70-72 were rejected under 35 USC 112, second paragraph. Applicants respectfully traverse this rejection.

The PTO alleges five grounds for this rejection: (1) the structure of the tested die is allegedly unclear; (2) it is allegedly unclear what influence the material composition of the blade has on the tested die; (3) the meaning of the word "sharpened" is allegedly unclear; (4) the scrub marks on the die terminals are allegedly akin to printed marks; and (5) the meaning of "cutting edge" and "slice mark" is allegedly not clear.

A. Grounds (1), (4), and (5)

The PTO asserted grounds (1), (4), and (5) above in the Office Action dated October 31, 2007 (hereinafter the "October Office Action"), and Applicants responded to those grounds with refuting arguments in the Amendment dated January 31, 2008 (hereinafter the "January Amendment"). The PTO did not address Applicants' refuting arguments in the most recent Office Action. The following arguments against grounds (1), (4), and (5) above are repeated from the January Amendment.

The PTO asserts that "what structural effects would result ... is not clear" and "how such would lead to a functional change is not clear." Distinguishing structural characteristics of the tested die of claim 60 resulting from the process recited in claim 60 include the slice marks created on the terminals. Such slice marks are distinct from scrub marks produced by prior art testing methods. A die having slice marks on the terminals provides improved functionality over a die having conventional scrub marks produced by prior art testing methods. For example, prior art scrub marks can prevent a wire from being bonded to a terminal, can decrease the effective life of the bond between the wire and the terminal, and can weaken a terminal causing the

terminal to loosen or even detach from the semiconductor device. (See, e.g., U.S. Patent No. 5,506,499 to Paur (cited in the IDS filed June 21, 2005), col. 2, lines 21-40 and col. 3, lines 7-25.) Testing using the process recited in claim 60, however, results in slice marks which can reduce the foregoing problems. For example, slicing a blade into the surface of the terminal with a motion within plus or minus forty-five degrees of an axis aligned with the length of the blade can result in a slice mark which is smaller and causes less damage to the surface of the terminal than prior art scrub marks. Accordingly, slice marks are more advantageous than prior art scrub marks.

The PTO further asserts that the slice marks appear to be akin to identifying marks that constitute mere printed matter. As mentioned above, the slice mark is a structural result of the recited process, and the slice mark has a functional effect on a wire bonded to the terminal as explained above. The slice marks are therefore not mere printed marks but constitute structural features of the die of claim 60 that provide distinct advantages over prior art dies.

The PTO also asserts that the meanings of the terms "cutting edge" and "slice mark" are not clear. Applicants respectfully assert that these terms have known meanings and a person of ordinary skill in the field would understand the terms. Indeed, the PTO has not explained why such terms would not be understood by a person of ordinary skill in the field. Certainly, these terms are reasonably clear and therefore meet the requirement of 35 USC 112, second paragraph, that the scope of the claim be set forth "with *a reasonable degree* of clarity and particularity." (MPEP 2173.02 (emphasis added).)

B. Grounds (2) and (3)

Turning first to the PTO's allegation that the effect of the material composition of the blades is not clear, Applications note that, as set forth in the MPEP, the second paragraph of 35 USC 112 requires that "the claims set out and circumscribe a particular subject matter" only "*with a reasonable degree of clarity and particularity.*" (MPEP § 2703.02 (emphasis added).) The MPEP further states that the "examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available." (MPEP § 2703.02.) Moreover, "[s]ome latitude in the manner of expression and the aptness of terms should be permitted even though the claim

language is not as precise as the examiner might desire." (MPEP § 2703.02.) Claim 60 recites that the blades "wipe across the terminals," which results in "the cutting edge of each blade slicing into a surface of each of the terminals so that a slice mark is created on each of the terminals." Applicants respectfully assert that this meets the requirements of 35 USC 112, second paragraph without the need to recite the material composition of the blade. Moreover, new claims 77 and 78 recite features relating to the material composition of the blade.

Turning next to the term "sharpened," Applicants initially note that the term "sharpened" does not appear in the claims. In a previous Amendment, Applicants removed the term "sharpened" from the claims. As noted in the previous Amendment, however, Applicants nevertheless assert that the term "sharpened" has a sufficiently clear meaning to meet the requirements of 35 USC 112, second paragraph, which as stated above, requires that the scope of the claim be set forth only "with *a reasonable degree* of clarity and particularity." (MPEP 2173.02 (emphasis added).)

C. The PTO Should Withdraw The Rejections Under 35 USC 112, Second Paragraph

For at least the foregoing reasons, Applicants respectfully assert that all pending claims meet the requirements of 35 USC 112, second paragraph. Therefore, the rejections should be withdrawn.

III. Rejection Under 35 USC § 112, First Paragraph

A. Written Description

Claims 47-49, 53-55, 60-63, 67, and 70-72 were rejected as allegedly failing to comply with the written description requirement. The Examiner has objected to the claim features of "cutting edge" and "slice mark" as being new matter since they allegedly do not appear in the original disclosure. This rejection is essentially the same as a rejection made in the October Office Action. Applicants respectfully traverse this rejection on the same grounds as were set forth in the January Amendment. Those arguments are repeated below.

The Examiner is respectfully reminded that there is no requirement that the terminology used in the claims must appear *exactly* in the original disclosure. "Newly added claim limitations must be supported in the specification through express, *implicit*, or *inherent*

disclosure." (MPEP 2163(I)(B) (emphasis added); see also MPEP 2163(III)(A) (describing the Examiner's burden when making a rejection for lack of written description support).)

The claimed feature of a "cutting edge" is supported by examples within the originally filed specification in numerous places (see, e.g., page 5, lines 3-6; page 9, lines 16-21; page 10, lines 18-23; page 11, lines 12-15; page 20, lines 9-11; and page 29, lines 16-17). As a particular example, and not by way of limitation, Figures 2A-2C illustrate an embodiment in which a blade 22 is oriented so that it can "slice (cut) through any non-conductive layer(s) on the surface of the terminal" (page 10, lines 21-23). From at least this example, a person skilled in the art would readily recognize that the original disclosure provides a description of a "blade comprising a cutting edge along a length of the blade" as presently claimed.

The claimed feature of a "slice mark" is also supported by examples within the originally filed specification in numerous places (see, e.g., page 5, lines 7-11; page 9, line 23 – page 10, line 3; and page 31, lines 11-14). As a particular example, and not by way of limitation, the originally filed specification describes how the cutting edge of the blade cleanly cuts through the non-conductive layer on the terminal enabling a good electrical connection. This is in contrast to prior art probes which scrape across the terminal surface "much as a bulldozer scrapes aside a layer of dirt" damaging the surface of the terminal (page 11, line 8 – page 12, line 7). As is known in the art, this damage created by prior art probes is called a "scrub mark." The interconnection elements described within the original filed specification, in contrast, produce slice marks, as a slicing (as opposed to scrubbing) action is performed. A person of ordinary skill in the art would therefore readily recognize that the original disclosure provides a description of a slice mark made on a terminal by the cutting edge of a blade slicing into a surface of the terminal as presently claimed.

In light of the above, the claims are adequately supported by the original written description, and Applicants request that the PTO withdraw the rejection.

B. Enablement Requirement

Claims 47-49, 53-55, 60-63, 67, and 70-72 were rejected as allegedly failing to comply with the enablement requirement. Applicants respectfully traverse this rejection.

This rejection is based on the allegation that aluminum oxide cannot be cut or sliced but can only be broken or sawed. The only support for this rejection provided by the PTO, however,

is the allegation that aluminum oxide has the same or similar characteristics as a diamond, and a diamond can be broken but not cut or sliced. Applicants respectfully assert that aluminum oxide and diamond have such different characteristics (e.g., hardness) that it is not reasonable to conclude that a common manner of dividing a diamond—by breaking—is the only possible way to cut aluminum oxide. Indeed, the PTO undermines its line of reasoning by acknowledging that aluminum oxide can be sawed with a rough knife edge, which, referring to the analogy of a nervous diamond technician raised by the PTO in the Office Action, is never how such a nervous diamond technician is show cleaving a large diamond in motion pictures or videos. It is thus clear that aluminum oxide need not be divided in the same manner that a diamond is divided. Thus, no evidence establishes that aluminum oxide cannot be sliced or cut. The PTO has thus not established a prima facie case of non-enablement. At least for this reason, the rejection should be withdrawn.

Moreover, the specification provides sufficient information for a person of ordinary skill in the field to make and use the invention as claimed. For example, Figure 2C provides a non-limiting example. As shown in Figure 2C, a force applied to blade 22 by contact with a terminal causes spring contact element 24 to deflect, which results in blade 22 wiping across the terminal. As explained, for example, on page 10, lines 5-23, this causes the blade 22 to slice or cut into the terminal. Applicants respectfully assert that at least the foregoing portions of the drawings and specification provide sufficient information for a person of ordinary skill in the field to make and use the invention as claimed. For at least this additional reason, the specification meets the enablement requirement.

IV. Rejection In View Of Prior Art:

Claims 47-49, 53-55, 60-63, 67, and 70-72 were rejected under 35 USC 102(e) as allegedly anticipated by US Patent No. 5,883,519 to Kennedy (hereinafter "Kennedy"). Applicants respectfully traverse these rejections.

In response to Applicants' arguments in the January Amendment that Kennedy teaches movement (see Figure 6) of his contact feature only in an upward and downward direction that is *perpendicular* (not aligned or parallel) to the length of the contact feature 71, the PTO argues that the "free end of the cantilevered beam will always move in an arc when deflected. Thus the contact feature of Kennedy will inherently deflect across the terminals when the free end of the

cantilevered beam of Kennedy moves relative to the other end that does not move. The deflection will be parallel to the axis and thus within all angular ranges claimed." The PTO thus acknowledges that Kennedy does not teach expressly movement of the contact feature 71 in a direction that is generally aligned with the length of the contact feature 71, but the PTO alleges that Kennedy inherently discloses such a feature.

The MPEP states that "[u]nder the principles of inherency, if a prior art device, in its *normal and usual operation*, would *necessarily perform the method claimed*, then the method claimed will be considered to be anticipated by the prior art device." (MPEP 2112.02, emphasis added.) The normal and usual operation of Kennedy is either to control the hammer action of contact feature 71 so that contact feature 71 contacts and then remains in contact with the terminal of chip 13 or contact feature 71 bounces on the terminal of chip 13. (Kennedy col. 10, lines 21-24.) Applicants respectfully assert that neither a contact feature 71 that contacts and then remains on the terminal nor a contact feature 71 that bounces on the terminal "necessarily" deflects across the terminal. For at least this reason, Kennedy does not inherently disclose the features of claim 60.

Moreover, claim 60 recites "the die and/or the contactor device such that terminals of the die are pressed against blades of the interconnection elements. This causes bodies of the interconnection elements to deflect, which in turn causes the blades to wipe across the terminals of the die. This causes a "cutting edge of each blade [to slice] into a surface" of a terminal. In contrast, as shown in Figure 5, Kennedy teaches smashing contact feature 71 like a hammer into chip 13. Such smashing unquestionably leaves a much different mark on a terminal of Kennedy's chip 13 than the slice mark the pressing of terminals against blades recited in claim 60 of this application leaves on a terminal of the die of claim 60. As discussed above, that slice mark is structural and provides advantages over much more destructive marks like the smash marks that would be left by Kennedy.

In short, Kennedy does not slice—Kennedy smashes. Consequently, Kennedy does not create slice marks on chip 13. At least for this reason, claim 60 is patentable over Kennedy.

Claims 47-49, 53-55, 61-63, 67, and 70-78 depend from claim 60 and at least because of that dependency are also patentable over Kennedy. Moreover, claims 47-49, 53-55, 61-63, 67, and 70-78 recite additional features not disclosed or rendered obvious by Kennedy.

For example, claim 73 recites that "the slice mark created on each of the terminals corresponds to a portion of a shape of the corresponding blade that wipes across the terminal," and claims 74-76 recite specific features regarding the shape of the blade and thus the shape of the slice mark. Kennedy does not recite such features. For at least these reasons, claims 73-76 further distinguish over Kennedy.

V. Conclusion

In view of the foregoing, Applicants submit that all of the claims are allowable and the application is in condition for allowance. If at any time the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned or Ken Burraston at (801) 426-2100.

Respectfully submitted,

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